Using Expedited 10g Protein Counter (EP-10) for Meal Planning

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Precise protein quantification and recommendation is essential in clinical dietetics, particularly in the management of individuals with chronic kidney disease, malnutrition, burns, wounds, pressure ulcers, and those in active sports.

The Expedited 10g Protein Counter (EP-10) was developed to simplify the quantification of dietary protein for assessment and recommendation of protein intake.[1] Instead of using separate protein exchanges for different food groups to quantify the dietary protein intake of an individual, every exchange in the EP-10 accounts for an exchange each of 3g non-protein-rich food and 7g protein-rich food (Table 1). The EP-10 was recently validated and published in the Journal of Renal Nutrition recently.[1] This study demonstrated that using the EP-10 for dietary protein intake quantification had clinically acceptable validity and reliability when compared with the conventional 7g protein exchange while requiring less time.[2] In clinical practice, the use of efficient, accurate and practical methods to facilitate assessment and treatment plans is important. The EP-10 can be easily implemented in the nutrition assessment and recommendation for a patient in the clinical setting.

This patient education tool was adapted from materials printed in the Journal of Renal Nutrition.[1] The tool may be used as presented or adapted to assist patients to achieve their recommended daily protein intake.

Tips on using EP-10 for recommendation in a nutrition plan:

1. Determine your client's protein requirement based on his/her body weight and medical condition (Example: For a client who is on hemodialysis, the protein requirement is 1.2 g per kg body weight. If his/her body weight is 60 kg, the daily requirement for this client is 60 x 1.2 = 72g)

2. Divide the calculated protein requirement by ten. This will provide the number of EP-10 required per day. Round up the results to the nearest half or whole number (72/10 = 7 exchanges of EP-10 per day)

3. Distribute the EP-10 accordingly in a meal plan and translate into food term. If your client is unable to meet his/her protein requirements through diet alone, you may need to prescribe a suitable supplement.

4. Finally, fill in the meal plan with other non-protein rich foods i.e. carbohydrates, vegetables and fruits.

Practical Aspects

The EP-10 is a new method developed for use in dietary protein quantification and recommendation. This paper provides a guide on its use in patient education.

References

1. Lim SL, Lye J, Liang S, Miller M, Chong YS. Development and validation of an expedited 10g protein counter (EP-10) for dietary protein intake quantification (published online ahead of print January 9 2012). J Ren Nutr. 2012). http://www.ncbi.nlm.nih.gov/pubmed/22226755. Accessed February 17, 2012.

2. Wheeler ML, Daly Am, Evert A, et al: Choose your foods: exchange lists for diabetes, sixth edition, 2008: Description and Guidelines for Use. J Am Diet Assoc. 2008;108: 883-888, 2008.

PROTEIN FOODS

Protein comes from animal and plant foods. Protein is necessary for maintenance and repair of body tissues. However in people with kidney failure, waste from excessive protein intake accumulates in the blood. High levels of these waste products can cause nausea, vomiting fatigue and general ill feeling. On the other hand, insufficient protein in the diet can lead to an increased risk of infection, malnutrition, muscle loss and slower wound healing. It is important that you eat the right amount of protein.

You need _____ protein exchanges per day.

Table 1. Sources of Protein: Equivalent of one exchange in the Expedited 10g Protein Exchange (EP-10)[1]

SOURCES OF PROTEIN	COOKED WEIGHT*	HOUSEHOLD MEASURE*
Meat/Poultry/Fish	30g	Size of 1 matchbox 1/3 palm size
Chicken wing (without drumlet)	45g	1
Canned tuna flakes	30g	2 tablespoons
Prawns / Shellfish	30g	4 medium pieces
Egg, whole	50g	1
Egg whites	50g	2
Corn kernels / Sweet corn	200g	1.5 cups
Peas, fresh or canned	100g	¾ cup
Milk	200ml	1 cup
Cheese slices	30g	1 slice
Yoghurt	125g	½ cup
Tofu/Beancurd (hard)	60g	½ square
Baked beans (drained)	140g	3 tablespoons
Cooked lentils/beans (eg: Dhal, Mung bean, Red bean, Green bean, Kidney bean, Soy bean)	90g	3 tablespoons
Dry lentils (uncooked)	30g	2 tablespoons
Gluten/Mock Meat	50g	1/3 cup
Cake	100g	1 slice
Custard/ Milk-based desserts	130g	½ cup

*All quantities are expressed in cooked weights and measures unless specified.

Protein Distribution (per day)

MEALS	PROTEIN EXCHANGES	PROTEIN FOODS
Breakfast	_____ **exchanges**	____ egg white  or/and ____ cup of milk  or/and ____ matchbox-sized fish/ chicken / meat 
Lunch	_____ **exchanges**	____ matchbox-sized fish / chicken / meat  or/and ____ square of tofu  or/and ____ tablespoons cooked lentils/beans 
Dinner	_____ **exchanges**	____ matchbox-sized fish / chicken / meat;  or/and ____ square of tofu  or/and ____ tablespoons cooked lentils/beans 
Snack		

Dietitian : _____
Contact number: _____

References

1. Lim SL, Lye J, Liang S, Miller M, Chong YS. Development and validation of an expedited 10g protein counter (EP-10) for dietary protein intake quantification (published online ahead of print January 9 2012). J Ren Nutr. 2012). http://www.ncbi.nlm.nih.gov/pubmed/22226755. Accessed February 17, 2012.